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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,260	12/12/2003	Toru Takayama	0756-7226	8689
31780	7590	04/08/2008	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			LOPEZ ESQUERRA, ANDRES	
			ART UNIT	PAPER NUMBER
			2818	
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			04/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/733,260

Applicant(s)

TAKAYAMA ET AL.

Examiner

ANDRES LOPEZ ESQUERRA

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 10-12 and 14-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 10-12 and 14-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 7, 2008 has been entered.

Response to Amendment

2. Acknowledgement is made of Amendment filed February 7, 2008.
3. Acknowledgement is made of New Claims 30 - 33.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 30 – 32 all recite the limitation "and at least one of the plurality of thin film integrated circuits" in lines 5 – 6 of each of the claims. There is insufficient antecedent basis for this limitation in the claim. It is examiner's understanding that applicant intended was to say "and the thin film integrated circuit", for examination purposes this is the interpretation that it will be given for the claim.

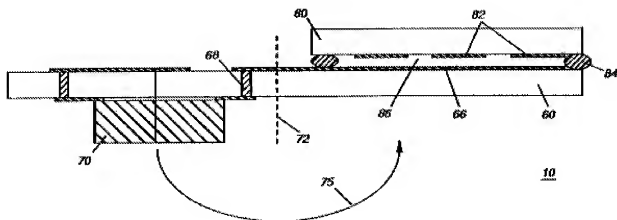
Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

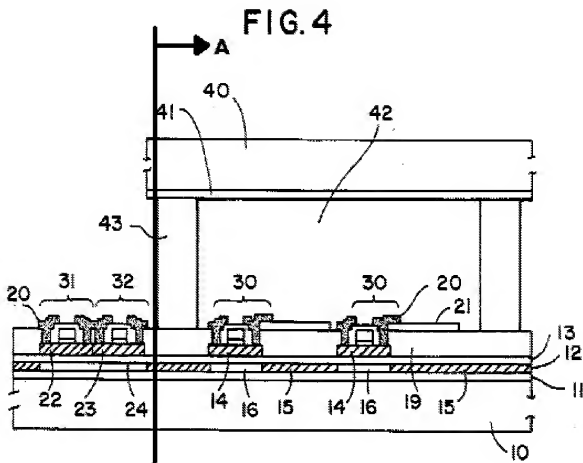
9. **Claims 1 – 2, 14 – 15, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge et al US 5,436,744 (Arledge) in view of Kusumoto US 5,567,967 (Kusumoto).**

**FIG. 5**

10. As for claims 1 – 2, Arledge discloses (Col. 3, lines 7 - 37) and shows in Fig. 5 a flexible LCD with integrated driver circuit comprising:

- a. a substrate (60) having a contact hole (where the conductive via (68) is preset);
- b. a liquid crystal display device (86) equipped on one side of the substrate; and
- c. a thin film integrated circuit (70) equipped on the other side of the substrate, wherein the display device is electrically connected to the thin film integrated circuit through the contact hole (68).

11. Arledge fails to disclose the limitation of each of the display device and the thin film integrated circuit comprising a polycrystalline semiconductor film.



12. Kusumoto discloses (Col. 7, lines 33 – 58, Col. 4, line 10 – 20) and shows in Fig. 4 a LCD display (A) with a peripheral driving circuit (31, 32) where both use a polycrystalline semiconductor layer (14, 22,24) on the construction.

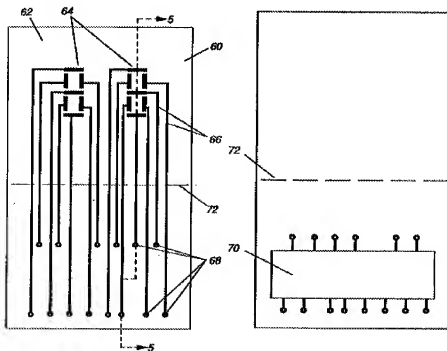
13. Kusumoto is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a polycrystalline semiconductor layer in the construction of both the LCD and the IC driving circuit.

14. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Arledge by using polycrystalline semiconductor layer in the construction of both the LCD and the IC driving circuit for

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advantages such as providing high mobility transistors in both parts (Col. 4, lines 14 – 20).

15. As for claims 14 – 15, Arledge discloses (Col. 2, lines 39 – 43) the use of a flexible substrate with a circuitry pattern on it and the same form from a thin plastic material like polyesters. Arledge fails to explicitly name polyimide as a material, it is known in the art that both can be substitute and have the same effect in the structure. Furthermore, Arlege discloses the claimed invention except for the explicit use of polyimide. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to substitute the polyimide with a polyester since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

**FIG. 3****FIG. 4**

16. As for claim 30, Arledge discloses (Col. 2, lines 46 – 51) and shows in Figs. 3 and 4 the substrate further comprising:

- d. a lead provided on the substrate (top of 68);
- e. a terminal provided in the display device (64);
- f. a first wire electrically connected to the lead and the terminal (66); and,
- g. a second wire electrically connected to the lead and at least one of the plurality of thin film integrated circuits (Fig.4).

17. Claims 4 – 5, 7 – 8, 10 – 12, 18 – 19, 22 – 23, 26 – 27, and 31 – 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge in view of Kusumoto, and further in view of Applicant's Admitted Prior Art (AAPA).

18. As for claims 4 – 5, 7 – 8, 10, and 12, Arledge discloses (Col. 3, lines 7 - 37) and shows in Fig. 5 a flexible LCD with integrated driver circuit comprising:

- h. a substrate (60) having a contact hole (where the conductive via (68) is preset);
- i. a display device (86) equipped on one side of the substrate; and
- j. a thin film integrated circuit (70) equipped on the other side of the substrate, wherein the display device is electrically connected to the thin film integrated circuit through the contact hole (68) making it an active matrix type device since the IC is a driving IC.

19. Arledge fails to disclose the limitation of each of the display device and the thin film integrated circuit comprising a polycrystalline semiconductor film.

20. Kusumoto discloses (Col. 7, lines 33 – 58, Col. 4, line 10 – 20) and shows in Fig. 4 a LCD display (A) with a peripheral driving circuit (31, 32) where both use a polycrystalline semiconductor layer (14, 22,24) on the construction.

21. Kusumoto is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a polycrystalline semiconductor layer in the construction of both the LCD and the IC driving circuit.

22. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Arledge by using polycrystalline semiconductor layer in the construction of both the LCD and the IC driving circuit for advantages such as providing high mobility transistors in both parts (Col. 4, lines 14 – 20).

23. Arledge in view of Kusumoto still fails to disclose the thickness of the IC card to be from .005 mm to 1 mm.

24. AAPA discloses (page 2) that the thickness of the IC card is generally 0.7 mm.

25. AAPA is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use create the thickness of the IC card to be 0.7 mm.

26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Arledge in view of Kusumoto by creating the thickness of the overall structure to be 0.7 mm for such advantages as been able to provide a compact LCD with its driving IC with out compromising its characteristics of high mobility. It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the thickness of the overall structure to be 0.7 mm,

since it has been held to be within the general skill of a worker in the art to combine both teachings present in the prior art references on the basis of its suitability for the intended use as a matter of obvious design choice. In re *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007).

27. Furthermore, Areledge in view of Kusumoto discloses the claimed invention except for the range of the IC card thickness to be from .05 mm to 1 mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to create the IC card thickness to be from .05 mm to 1 mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

28. As for claims 18 – 19, 22 – 23, and 26 – 27, Arledge discloses (Col. 2, lines 39 – 43) the use of a flexible substrate with a circuitry pattern on it and the same form from a thin plastic material like polyesters. Arledge fails to explicitly name polyimide as a material, it is known in the art that both can be substitute and have the same effect in the structure. Furthermore, Arlege discloses the claimed invention except for the explicit use of polyimide. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to substitute the polyimide with a polyester since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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29. As for claims 31 – 33, Arledge discloses (Col. 2, lines 46 – 51) and shows in Figs. 3 and 4 the substrate further comprising:

- k. a lead provided on the substrate (top of 68);
- l. a terminal provided in the display device (64);
- m. a first wire electrically connected to the lead and the terminal (66); and,
- n. a second wire electrically connected to the lead and at least one of the plurality of thin film integrated circuits (Fig.4).

30. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge in view of Kusumoto, and further in view of Chen US 6,4,456,353 (Chen).

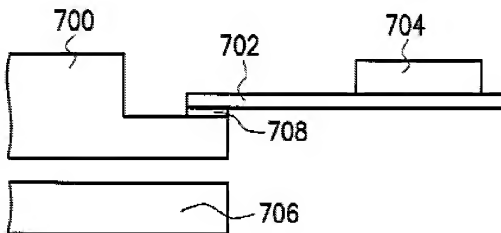


FIG. 8

31. As for claim 16, Arledge in view of Kusumoto fail to disclose a use of adhesive agent.

32. Chen discloses (Col. 5, lines 60 – 64) and shows in Fig. 8 the use of an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702).

33. Chen is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702).

34. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Arledge in view of Kusumoto by using an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702) for such advantages as providing secure and stable connection between the display device and the driving circuit (Col. 2, lines 45 – 54).

35. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge in view of Kusumoto, and further in view of Freeman et al. US 6,019,284 (Freeman).

36. As for claim 17, Arledge in view of Kusumoto fails to disclose the use of a plurality of antenna coils.

37. Freeman discloses an IC card that uses wireless communication element (not shown) (Col. 6, lines 49 – 50).

38. Freeman is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use wireless communication element in an IC card structure.

39. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Chen in view of Kusumoto by using wireless communication element in an IC card structure for such advantages as been able provide communication to the outside of the card (Col. 1 lines 12 – 17).

40. As for the plurality limitation, Arledge in view of Kusumoto and Freeman discloses the claimed invention except for the use of plurality of wireless communication elements. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a plurality of wireless communication elements, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

41. Claims 20, 24, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge in view of Kusumoto and AAPA, and further in view of Chen.

42. As for claims 20, 24, and 28, Arledge in view of Kusumoto fail to disclose a use of adhesive agent.

43. Chen discloses (Col. 5, lines 60 – 64) and shows in Fig. 8 the use of an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702).

44. Chen is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702).

45. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Arledge in view of Kusumoto by using an adhesive agent (708) to connect the LCD (700, 706) to the substrate (702) for such advantages as providing secure and stable connection between the display device and the driving circuit (Col. 2, lines 45 – 54).

46. Claims 21, 25, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arledge in view of Kusumoto and AAPA, and further in view of Freeman.

47. As for claims 21, 25, and 29, Arledge in view of Kusumoto fails to disclose the use of a plurality of antenna coils.

48. Freeman discloses an IC card that uses wireless communication element (not shown) (Col. 6, lines 49 – 50).

49. Freeman is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use wireless communication element in an IC card structure.

50. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Chen in view of Kusumoto by using wireless communication element in an IC card structure for such advantages as been able provide communication to the outside of the card (Col. 1 lines 12 – 17).

51. As for the plurality limitation, Arledge in view of Kusumoto and Freeman discloses the claimed invention except for the use of plurality of wireless communication elements. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a plurality of wireless communication elements, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Conclusion

52. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2003/0012870, US 2005/0139918, US 2005/0106841, US 2004/0108987, US 2003/0089132, US 2003/0067576, US 2001/0022644, US

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2001/0009342, US 2006/0097286, US 2001/0000763, US 2003/0090450, US 2002/0159010, US 6,019,284, US 6,961,111, US 6,518,557, US 6,456,353, US 6,402,039, US 7,239,564, US 6,414,441, US 6,391,747, US 5,834,071, US 5,656,511, US 6,616,035, US 6,360,954, US 6,064,988, US 6,028,926, US 6,012,636, US 5,789,732, US 4,918,631, US 4,754,418, US 4,667,087, US 5,737,272, US 4,238,848, US 4,614,861, US 6,191,838, US 4,931,623, US 5,436,744, US 5,567,967, and US 2002/0186341.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDRES LOPEZ ESQUERRA whose telephone number is (571)272-9753. The examiner can normally be reached on M - Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven H. Loke can be reached on (571) 272 - 1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrés López-Esquerro
Examiner
Art Unit 2818

ALE

/DAVID VU/
Primary Examiner, Art Unit 2818